

**APPARATUS FOR REMOVAL/REMAINING THICKNESS  
PROFILE MANIPULATION**  
**ABSTRACT OF THE DISCLOSURE**

5 An invention is provided for removal rate profile manipulation during a CMP  
process. An apparatus of the embodiments of the present invention includes an actuator  
capable of vertical movement perpendicular to a polishing surface of a polishing pad.  
The actuator is further capable of flexing the polishing pad independently of a pad  
support device. Also included in the apparatus is an actuator control mechanism that is in  
communication with the actuator. The actuator control mechanism is capable of  
10 controlling an amount of vertical movement of the actuator, allowing the actuator to  
provide local flexing of the polishing pad to achieve a particular removal rate profile.  
The actuator can also be capable of horizontal movement parallel to the polishing surface  
of the polishing pad.